REMARKS

In paragraphs 4 and 5 of the final Action, claims 10-19 were rejected under 35 U.S.C. 103(a) by Wesley, Roberts and Long.

In view of the rejections, claims 10 and 19 have been amended by filing RCE. Claims pending in the application are patentable over the cited references.

In a building reinforcing structure of the present invention, a reinforcing member extends between a first structural member and a second structural member forming a building, and is fixed thereto. The reinforcing member comprises a first spring member and a second spring member. The first spring member is curved by protruding to a direction (outside direction) opposite to a contacting portion or an intersecting portion between the structural members of the building, and the second spring member is curved by protruding toward the contacting portion or the intersecting portion between the structural members of the building. The first spring member and the second spring member form a space therebetween, and the space between these spring members includes a damper member (4) and a synthetic resin foam (2a) which are provided adjacent to the first and second spring members.

When a pressing force is applied to the structural members of the building, i.e., when a stress is received in a direction that the angles in which the first structural member and the second structural member are contacted or intersected become narrower, both the first spring member and the second spring member forming the reinforcing member protrude and are curved. Namely, the first spring member and the second spring member are curved in the directions wherein the space formed between the first spring member and the second spring member extends. The damper member (4) provided in this space has a function reducing the extension of the space.

On the other hand, when a pulling force is applied between the structural members of the building, i.e., when a stress is received in a direction that the angles wherein the first structural member and the second structural member are contacted or intersected increase, the space formed between the first spring member and the second spring member comprising the reinforcing member becomes narrower. However, the damper member (4) and the synthetic resin foam (2a) provided in the space include a function controlling for narrowing the space.

Moreover, in the building reinforcing structure of the present invention, a synthetic resin foam (2b) is filled in the space which is surrounded by the first structural member and the second structural member of the building. When a pressing force is applied to the first structural member and the second structural member of the building, the synthetic resin foam (2b) has functions for resisting the second spring member to curve in the direction of the contacting portion or the intersecting portion between the structural members of the building; and reducing the angle of the contacting portion or the intersecting portion between the structural members of the building to become narrower.

Thus, the reinforcing member of the present invention incorporates the functions of the first and second spring members, and the actions of the damper member (4) and the synthetic resin foam (2a) provided in the space between the spring members. When an external pressing force or pulling force is applied to the building, the reinforcing member of the present invention provides an interaction effect which absorbs and reduces the external pressing force or pulling force. Also, the synthetic resin foam (2b) which is filled in the space surrounded by the first structural member and the second structural member of the building cooperates with the reinforcing member, and reduces the energy accompanied by the pressing force or pulling force applied to the

first structural member and the second structural member when the pressing force or pulling force is received between the first structural member and the second structural member.

With the reinforcing member of the present invention including the above-mentioned excellent reinforcing function, when a pressing force or pulling force is applied to the structural members, the building reinforcing structure of the present invention provides an excellent anti-vibration and anti-oscillation structure which can absorb and reduce the energy, reduce and promptly converge an oscillation of the building, and restore the deformation of the structural members to its original state.

In the Action, it is indicated a motor vehicle chassis (1) and an attaching member (shackle) (2) (numeral (20) according to the Examiner) to the chassis of a vehicle spring (3) in Wesley respectively correspond to the first structural member and the second structural member of the present invention. However, this discussion ignores the technical content and cannot be accepted.

Originally, the chassis and the member for attaching the ends of the vehicle spring to the chassis for an automobile have essentially completely different functions, objects and mechanisms of action from those of the structural members (first structural member and second structural member) according to the present invention. Therefore, the above-mentioned members Wesley cannot be applied to the members of the present invention as the Examiner indicates.

As for Wesley, the portion shown by the numeral (1) in Fig. 1 is the motor vehicle chassis, and the portion which the Examiner named as the numeral (20) is the member (shown by the numeral (2) in Fig. 1) for attaching one end of the vehicle spring (3). The object and function of both portions completely differ from those of the structural members for constructing the building according to the present invention, so that the above-mentioned portions in

Wesley never correspond to the first and second structural members of the present invention.

The vehicle spring shown by the numeral (3) and the spring shown by the numeral (9) in Fig. 1 control a shock received through a wheel and an up-and-down movement or bounce of the vehicle body due to the shock, and maintain the stable travel of the motor vehicle (see lines 14 to 22 in Column 2).

On the other hand, as described before, as for the reinforcing member for reinforcing the structural members of the building of the present invention, the reinforcing member cooperates with the actions of the first and second spring members, and the actions of the damper member (4) and synthetic resin foam (2a) provided in the space between the spring members. When the external pressing force or pulling force is applied to the building, the reinforcing member absorbs and reduces the force. In the case wherein the structural members receive a pressing force or pulling force, the above-mentioned reinforcing member provides an interaction effect which can absorb and reduce the energy accompanied with the pressing force or pulling force; reduce and promptly converge the oscillation of the building; and restore the deformation of the structural members to its original state. Therefore, the object and function of the vehicle spring comprising the springs shown by the numerals (3) and (9) in Wesley completely differ from those of the reinforcing member of the present invention, so that the vehicle spring in Wesley does not correspond to the reinforcing member of the present invention.

Roberts and Long were cited to show the damper member (4) and the synthetic resin foam (2a) which are provided in the space between the spring members of the present invention.

Both Roberts and Long relate to a shock-absorber for automobile-springs for absorbing the shock received through the vehicle. Roberts discloses the shock-absorber for automobile-

springs comprising an auxiliary frame (1) which is bowed in the opposite direction from an automobile spring (2), and curves in the direction of the automobile spring. Upper and lower cushions (rubber materials) 5 and 6 are secured to the central portion of the protruding arch of the auxiliary frame and the central portion to which the automobile spring (2) corresponds. Also, Long discloses an elastic spring for carriages wherein a spring made of rubber or similar material is placed between leaf springs of the elastic spring for carriages comprising two sheets of leaf springs.

Both Roberts and Long merely show the cushions made of rubber materials or the spring made of rubber materials related to the shock absorber for absorbing the shock received through the vehicle spring. Therefore, objects and functions of the cushions and the spring differ from those of the damper member and the synthetic resin foam provided in the space between the spring members of the present invention which controls the deformation of the building due to a pressing force or pulling force applied to the structural members of the present invention. Namely, the cushions provided in the automobile spring and the auxiliary frame in Roberts, or the spring made of rubber materials provided between the leaf springs of the automobile spring comprising two sheets of leaf springs in Long absorb the shock received through the vehicle as described above.

Whereas, the reinforcing member of the present invention controls the deformation of the building due to a pressing force or pulling force applied to the structural members, and restores the deformation to its original state. Thus, the damper member and the synthetic resin foam of the present invention reinforce the function of the reinforcing member, so that the object and function of the damper member and the synthetic resin foam differ from those of the cushions or the spring made of rubber materials disclosed in

Roberts and Long. Herewith, Roberts and Long never teach the reinforcing member of the present invention.

In order to further clearly show the differences of the invention from Wesley, in case the forces are applied to the reinforcing structure of the invention and the structure of Wesley, explanations are made with reference to the attached drawings.

(1) When a stress (pressing force) is applied to the structural member 11 or 12 in a direction shown by an arrow F1 in Fig. 1 of the attached drawings, the structural members 11, 12 are inclined in a direction Y_1 or X_1 shown by a broken line as a supporting point of the contacting portion or intersecting portion between the structural members (the angles of the contacting portion or the intersecting portion between the structural members become narrower). In this condition, in a spring member 33 (first spring member), a force is applied in a direction a_1. On the other hand, in a spring member 5 (second spring member), a force is applied in a direction b_1. Accordingly, the space formed between the first spring member and the second spring member is extended.

This space includes the damper member 4 and the synthetic resin foam 2a. The damper member 4 controls the movements in the directions of arrows a_1 and b_1, and resists the extension of the space formed by the first spring member and the second spring member.

Also, the synthetic resin foam 2b which is filled in the space surrounded by the structural members 11, 12 and the reinforcing member, controls the movement in the direction of the arrow b_1 of the second spring member 5, and resists an inclination of the structural member 11 or 12 and the extension of the space formed by the first spring member and the second spring member.

(2) When a stress (pulling force) is applied to the structural member 11 or 12 in a direction shown by an arrow F2 in Fig. 2 of the attached drawings, the structural members 11, 12 are inclined

in a direction Y_2 or X_2 shown by a broken line as a supporting point of the contacting portion or intersecting portion between the structural members (the angles of the contacting portion or the intersecting portion between the structural members become larger). In this situation, in the spring member 33 (first spring member), a force is applied in a direction of an arrow a_2. On the other hand, in the spring member 5 (second spring member), a force is applied in a direction of an arrow b_2. Accordingly, the space (space 1) formed between the first spring member and the second spring member becomes narrow.

The damper member 4 and the synthetic resin foam 2a provided in the space control the movements in an a_2 direction and a b_2 direction and resist the space 1 to narrow.

(3) Regarding the vehicle spring in Wesley, the operation thereof will be explained with reference to Fig. 1 of Wesley.

In the vehicle spring in Wesley, a force is applied in a direction shown by an arrow F due to the shock received through the wheel. Here, the vehicle spring 3 is pulled (extended) in the directions shown by arrows A wherein both sides of the vehicle spring 3 are fixed (attaching portions). An auxiliary spring 9 is attached as shown in Fig. 2 (omitted) in such a way as to be integrated with the vehicle spring 3 by clips shown by the numeral 11; controls the vehicle spring 3 to be pulled in a direction of the arrow A; and prevents the bounce (up-and-down movement) of the vehicle body in cooperation with the vehicle spring 3. However, numeral 1 (motor vehicle chassis) and numeral 20 named by the Examiner (fixed members of ends of the vehicle spring) do not move. Namely, the motor vehicle chassis 1 and the attaching portions of the fixed members of numeral 20 are not deformed. Also, in the central portion between the vehicle spring 3 and the auxiliary spring 9, an axle is fixed. The interval of a space (numeral 21 named by the Examiner) does not substantively change in three ways,

as in the present invention. A space of numeral 22 does not change as well.

As stated above, the operation or function when the force is applied to the structure is entirely different between the invention and Wesley.

Further, all the cited references relate to the structure of the vehicle spring for an automobile, so that technical fields, technological problems, objects, and functions of the above inventions completely differ from those of the present invention.

As explained above, even if the cited references are combined, claims of the application are not obvious from the cited references.

Reconsideration and allowance are earnestly solicited.

Respectfully Submitted,

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